

WHAT IS CLAIMED IS:

1. A fusion protein for the alleviation of symptoms associated with an autoimmune disorder comprising an immunoglobulin or portion thereof linked to one or more autoantigenic polypeptides or fragments thereof wherein said immunoglobulin or portion thereof is capable of binding to an Fc receptor and being endocytosed by an antigen presenting cell and said one or more autoantigenic polypeptides or fragments thereof provides more than one T cell receptor peptide agonist for presentation on the surface of said antigen presenting cell upon endocytic processing.

10

2. The fusion protein of claim 1 wherein the immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

15

3. The fusion protein of claim 1 wherein the immunoglobulin or portion thereof comprises a human IgG molecule or portion thereof.

4. The fusion protein of claim 1 wherein said one or more autoantigenic polypeptides or fragments thereof is associated with an immune disorder selected from the group consisting of multiple sclerosis, lupis, rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

5. The fusion protein of claim 1 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of myelin basic protein.

25

6. The fusion protein of claim 1 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of proteolipid protein.

7. The fusion protein of claim 1 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of myelin basic protein and at least a portion of proteolipid protein.

8. A method for alleviating symptoms associated with an autoimmune disorder in a patient in need thereof comprising the steps of:

providing a composition comprising a fusion protein wherein said fusion protein comprises an immunoglobulin or portion thereof linked to one or more autoantigenic polypeptides or fragments thereof wherein said immunoglobulin or portion thereof is capable of binding to an Fc receptor and being endocytosed by an antigen presenting cell and said one or more autoantigenic polypeptides or fragments thereof provides more than one T cell receptor peptide agonist for presentation on the surface of said antigen presenting cell upon endocytic processing; and

administering a therapeutically effective amount of said composition to said patient.

9. The method of claim 8 wherein said composition further comprises a pharmaceutically acceptable carrier.

10. The method of claim 8 wherein the immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

11. The method of claim 8 wherein the immunoglobulin or portion thereof comprises a human IgG molecule or portion thereof.

12. The method of claim 8 wherein said immune disorder is selected from the group consisting of multiple sclerosis, lupis, rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

13. The method of claim 12 wherein said immune disorder is multiple sclerosis.



14. The method of claim 8 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of myelin basic protein.

5 15. The method of claim 8 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of proteolipid protein.

10 16. The method of claim 8 wherein said one or more autoantigenic polypeptides or fragments thereof comprises at least a portion of myelin basic protein and at least a portion of proteolipid protein.

17. A method for presenting multiple T cell receptor agonists on the surface of a professional or nonprofessional antigen presenting cell comprising the steps of:

15 providing a fusion protein comprising an immunoglobulin or portion thereof linked to one or more autoantigenic polypeptides or fragments thereof wherein said immunoglobulin or portion thereof is capable of binding to an Fc receptor and being endocytosed by an antigen presenting cell and said one or more autoantigenic polypeptides or fragments thereof provides more than one T cell receptor peptide agonist for presentation on the surface of said antigen presenting cell upon endocytic processing;

20 contacting said fusion protein with at least one Fc receptor present on a surface of a professional or nonprofessional antigen presenting cell whereby the fusion protein is internalized by the antigen presenting cell; and

25 endocytically processing the internalized fusion protein to provide more than one T cell receptor peptide agonist wherein the provided T cell receptor agonists are presented on the surface of the antigen presenting cell.

18. The method of claim 17 wherein said provided T cell receptor agonists are presented on the surface of the antigen presenting cells associated with at least one MHC complex.

69

5

0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9